Desire® Series by ETC

D40/D60 XTI
User Manual

v1.6

Rev A

Read entire User Manual before using equipment.

Copyright © 2013 Electronic Theatre Controls, Inc.
All Rights reserved.
Product information and specifications subject to change.
Part Number: **7410M1250-1.6.0** Rev A
Released: 2014-02

ETC permits the reproduction of materials in this manual only for non-commercial purposes. All other rights are reserved by ETC.

ETC intends this document, whether printed or electronic, to be provided in its entirety.

ETC and Desire are registered trademarks of Electronic Theatre Controls, Inc. in the United States and other countries.

Other product and company names mentioned herein may be trademarks and/or service marks of their respective owners.

This product is protected by one or more of the following U.S. Patents: 6,016,038, 6,150,774, 6,788,011, 6,806,659, 6,683,423 and 7,023,543

Table of Contents

Introduction 1

Quick Setups 1
Vivid, Lustr+, Fire, Ice and Studio HD 1
Studio Daylight, Studio Tungsten 2

Models 3

Applications 3

Compliance 4

Document Conventions 4
Notices 4
Typography Used in This Guide 4

Safety 5

Contacts 6

Chapter 1 Installation and DMX Profiles 7

Specifications 8
Dimensions and Clearances 9
Fixture Weight 9
Installation Clearances 10
Typical Power Consumption D40XTI 11
Typical Power Consumption D60XTI 11
Note About LED Fixtures. 13
Color Rendering Index and Color Quality Scale Ratings 13

Installation 14
Installation on a Pipe 14
Accessory Installation 16
Installation on a Permanent Base 16
Installation on a Pole 16
Installation on a Wall 17
Power and Data Cabling Requirements 17

Indicator Lights 19

DMX Profile 20
Addressing 20
Profiles 20

DMX Footprints and Channel Mapping 24
Vivid, Lustr+, Fire, Ice, Studio HD 24
Studio Tungsten and Daylight 24

Chapter 2 Operation 25

Overview 26

Gadget 27

DMX/RDM Gateway 28

Configuration 29
DMX Address 29
Data Loss 29
Plus Seven (Vivid, Lustr+, Fire, Ice, and Studio HD) 29
LED Settings 30
Status Indicators 33
Over Temp 33
Restore Defaults 33
Software Update Mode 33

Presets and Sequences 34
Presets 34
Sequences 36

Appendix A Quick Start 38

Install 38
Focus. 38
Configure. 38
Quick Setups 39

Appendix B RDM Commands 40

Introduction

Congratulations on your purchase of a *Desire Series D40/D60 XTI fixture* by *ETC*.

The Desire XTI Series is designed for permanent installations indoors or outdoors, with an IP66 rating, rugged die-cast enclosure, and noiseless fan-free operation. Up to 32 Desire XTI fixtures can be linked together on one data chain and configured over a DMX/RDM network.

Desire's x7 Color System™ seven-hue technology produces a light and color quality that conventional LED systems cannot duplicate. This unique color system produces bright, broad-spectrum whites and intense colors equally well, rendering pigments, objects, and skin tones in a natural way.

Fire and Ice fixtures use elements of the x7 Color System for superior performance in deep saturated colors.

Studio Daylight and Studio Tungsten fixtures use high-output white LEDs for maximum brightness and efficacy. Studio Tungsten interacts very well with incandescent sources, while Studio Daylight easily replaces a variety of HMI lamps and natural sunlight.

Quick Setups

You can use any one of the Quick Setups and fine-tune settings for operation via DMX/RDM protocol.

Vivid, Lustr+, Fire, Ice and Studio HD

Some of the options include:

- Multiple DMX profiles ranging from a simple 3-channel RGB profile to 8-channel native color and intensity control.
- Multiple dimming curve options.
- Preset colors and sequences for standalone operation.
- White point selection; white light and color behavior based on a specific color temperature white light such as 3200K or 5600K.
- Loss-of-data behavior options.
- Power regulation modes; three output options that offer a choice between maximum light output for lower duty cycles and maximum thermal stability and output consistency for higher duty cycles.

Some of the options include:

- Multiple dimming curve options.
- Presets and sequences for standalone operation.
- Strobe.
- Loss-of-data behavior options.
- Power regulation modes; three output options that offer a choice between maximum light output for lower duty cycles and maximum thermal stability and output consistency for higher duty cycles.

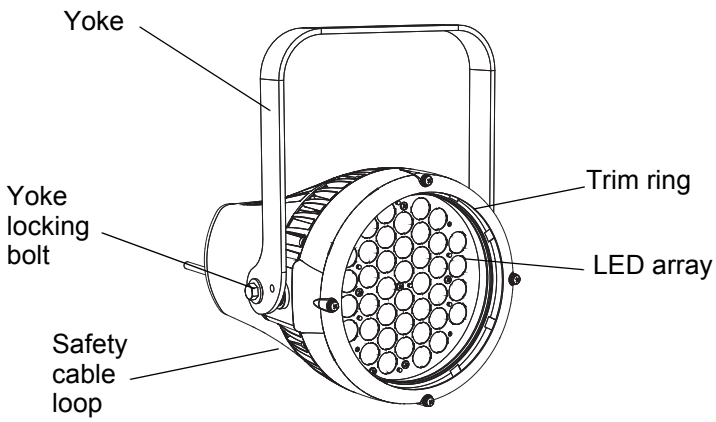


Figure-1.1 Components of a D40/D60 XTI Fixture.

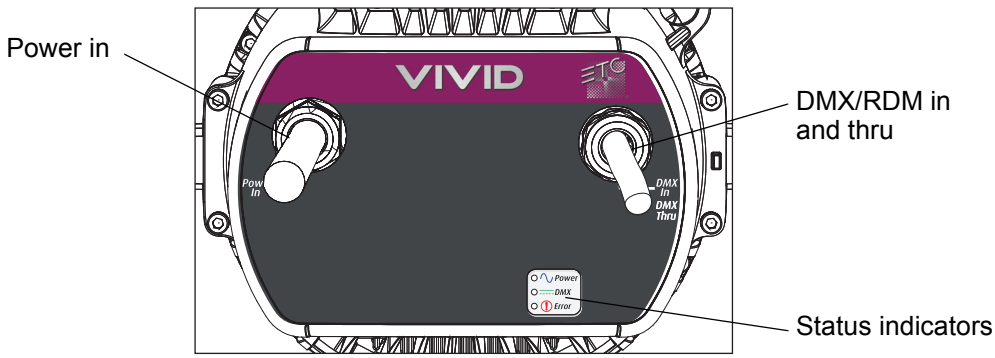


Figure-1.2 Components of the Rear Panel.

Models

Each member of the Desire Series product line is unique and optimized for a specific lighting task. All fixtures feature narrow optics for the longest throws.

Vivid

- Full 7-color x7 LED array
- Optimized for high-output deep pastels and strong saturated colors—an all-around workhorse for vibrant color washes

Lustr+

- Specialized x7 LED array with 6 colors plus white
- Broad-spectrum color optimized for the best white and light tints across the entire white and pastel range
- Beautifully illuminates skin tones and other objects—ideal for theatrical lighting

Fire

- Optimized for saturated colors at the red end of the spectrum
- Strongest output for high-intensity washes and theatrical environments

Ice

- Optimized for saturated colors at the blue end of the spectrum
- Strongest output for high-intensity washes and theatrical environments

Studio HD

- Precise mix of warm white and cool white LEDs plus additional strategic colors for more spectral power
- Continuously variable color temperature white light
- Extreme CRI and high-definition illumination of skin tones from 2700K to 6500K

Studio Daylight

- 5,700K nominal correlated color temperature
- 70 CRI typical

Studio Tungsten

- 3,000K nominal correlated color temperature
- 85 CRI typical

Applications

- Houses of worship
- Museums
- Theme parks
- Commercial buildings
- Outdoor signage
- Outdoor performance venues
- Public sculptures

Compliance

The Desire D40/D60XTI Series fixture complies with and has been tested to the following regulatory standards:

- ETL Listed to UL 1598 USA / CSA C22.2 No. 250.0-08 Canada
- CE EN55015:2006 + A1:2007 / EN55022:2006 + A1:2007 Class B / EN61000-3-2:2006 + A2:2009 / EN61000-3-3:2008 / EN61547:1996 + A1:2000

Document Conventions

Notices

Throughout this manual, the following are used to alert you to notes and safety notices.

Note: *Notes are helpful hints and information that is supplemental to the main text.*

CAUTION: *A Caution statement indicates situations where there may be undefined or unwanted consequences of an action, potential for data loss or an equipment problem.*

WARNING: ***Warning statement indicates situations where damage may occur, people may be harmed, or there are serious or dangerous consequences of an action.***

WARNING: ***RISK OF ELECTRIC SHOCK! This warning statement indicates situations where there is a risk of electric shock.***

Typography Used in This Guide

Menu items and commands you must perform are indicated in **bold text**. For example:

Using an RDM configuration tool, select **Off** to turn the Status Indicators off.

Safety

The Desire series fixtures are intended for professional use only. **Read entire User Manual before using equipment.**

WARNING:

Note the following safety warnings before use:

- Do not mount the Desire XTI fixture on or near a flammable surface.
- Mount and support the fixture only by the primary suspension holes in the yoke or mounting brackets.
- Mount the fixture from a suitable structure using only the hardware rated for the weight of the fixture.
- In addition to primary suspension, attach a safety cable (ETC Model 400SC or other approved safety cable or device) to the fixture housing. Appropriate attachment point (hole) is provided in the protruding tab on the fixture housing.
- Disconnect the unit from power before all cleaning and maintenance.
- Maximum recommended ambient operating temperature: Ta=40°C (104°F)
- Maximum anticipated external surface temperature: Tmax=80°C (158°F)
- External temperature after 5 minutes of full-brightness operation and 23°C (74°F) ambient: 38°C (100°F)
- External Temperature (steady state achieved) at 23°C (74°F): 70°C (158°F)

Contacts

If you have questions about your Desire series fixture that are not answered in this manual, please contact the supplier of your ETC equipment or ETC Technical Services. For general information, your most convenient resources are the references provided in this manual. To search more widely try the ETC web site at www.etcconnect.com.

For technical questions about Desire Series fixtures, contact ETC Technical Services directly at one of the offices listed below. Emergency service is available from all ETC offices outside of normal business hours.

Americas

Electronic Theatre Controls Inc.
Technical Services Department
3031 Pleasant View Road

Middleton, WI 53562
800-775-4382 (USA, toll-free)
+1-608 831-4116
service@etcconnect.com

United Kingdom

Electronic Theatre Controls Ltd.
Technical Services Department
26-28 Victoria Industrial Estate
Victoria Road,
London W3 6UU England

+44 (0)20 8896 1000
service@etceurope.com

Asia

Electronic Theatre Controls Asia, Ltd.
Technical Services Department
Room 1801, 18/F
Tower 1, Phase 1 Enterprise Square
9 Sheung Yuet Road
Kowloon Bay, Kowloon, Hong Kong
+852 2799 1220
service@etcasia.com

Germany

Electronic Theatre Controls GmbH
Technical Services Department
Ohmstrasse 3
83607 Holzkirchen, Germany
+49 (80 24) 47 00-0
techserv-hoki@etcconnect.com

Please email comments about this manual to: **TechComm@etcconnect.com**

Chapter 1
Installation and DMX Profiles

This chapter contains the following sections:

- ***Specifications*** 8
- ***Installation*** 14
- ***Indicator Lights*** 19
- ***DMX Profile*** 20
- ***DMX Footprints and Channel Mapping*** 24

Specifications

Physical

- Rugged die-cast aluminum construction
- Advanced thermal management systems for long LED life
- Easy-to-remove trim ring for accessories
- Ambient operating temperature -20 to 40 °C (-4 to 104 °F)
- Continuous operation at 40 °C (104 °F)
- Stainless steel mounting yoke
- Available in black (standard), white (optional), silver, or custom colors (contact factory)
- Rated IP66 for exterior use
- No-noise, fan-free convection cooling for acoustically sensitive installations
- See *Fixture Weight, page 9*

Electrical

- 100V to 240V 50/60 Hz universal power input
- Requires power from non-dim source
- Up to 32 fixtures may be linked on one data chain
-

LEDs

- 40 or 60 Luxeon® Rebel™ LED emitters (Vivid, Lustr+, Fire, Ice, and Studio HD)
- 50,000 hr. LED life (50,000 hours to 70% intensity)
- 40 or 60 Luxeon® Rebel™ ES LED emitters (Studio Daylight and Studio Tungsten)
- See *Note About LED Fixtures, page 13*

Optical

- Tight primary field angle of 17° (Vivid, Lustr+, Fire, Ice, and Studio HD)
- Tight primary field angle of 24° (Studio Daylight and Studio Tungsten)
- Secondary lenses available for multiple beam spread options including round, oblong, and linear patterns
- Combine linear lenses for desired beam spread

Color

- Specialized capabilities from different LED array options based on x7 color-mixing expertise:
  - Vivid – Optimized for strong, saturated colors at maximum brightness
  - Lustr+ – x7 Color System array with a high-intensity white LED for an ideal theatrical wash light Full range color, with an emphasis on lighter colors and white
  - Fire and Ice – Optimized for high-intensity saturated colors in either the warm, red end of the spectrum (Fire) or the cool, blue end of the spectrum (Ice)
  - Studio HD — Optimized for variable color temperature white light
- Interacts seamlessly with conventional sources
- Achieves excellent 3200° or any other Correlated Color Temperature white light from 2000 to 10,000°K (except Fire or Ice) (CCT adjustment not available on Studio Daylight and Studio Tungsten)
- Beautifully illuminates skin tones and other objects
- Deeply saturated colors across an exceptionally wide gamut

Control

- DMX512-A compliant
- DMX in via 6 foot cord and supplied DMX termination board
- RDM functionality for address and setting changes and playing presets
- Console-free presets and sequences via RDM device
- Multiple profile options for different levels of control
- Optional strobe channel
- Master/slave mode
- 15-bit virtual dimming engine for smooth, high-quality theatrical fades
- See *DMX Profile, page 20*

Dimensions and Clearances

Use the following dimensions to allow proper clearances around the fixture. Allow additional space for cables.

D40XTI

D60XTI

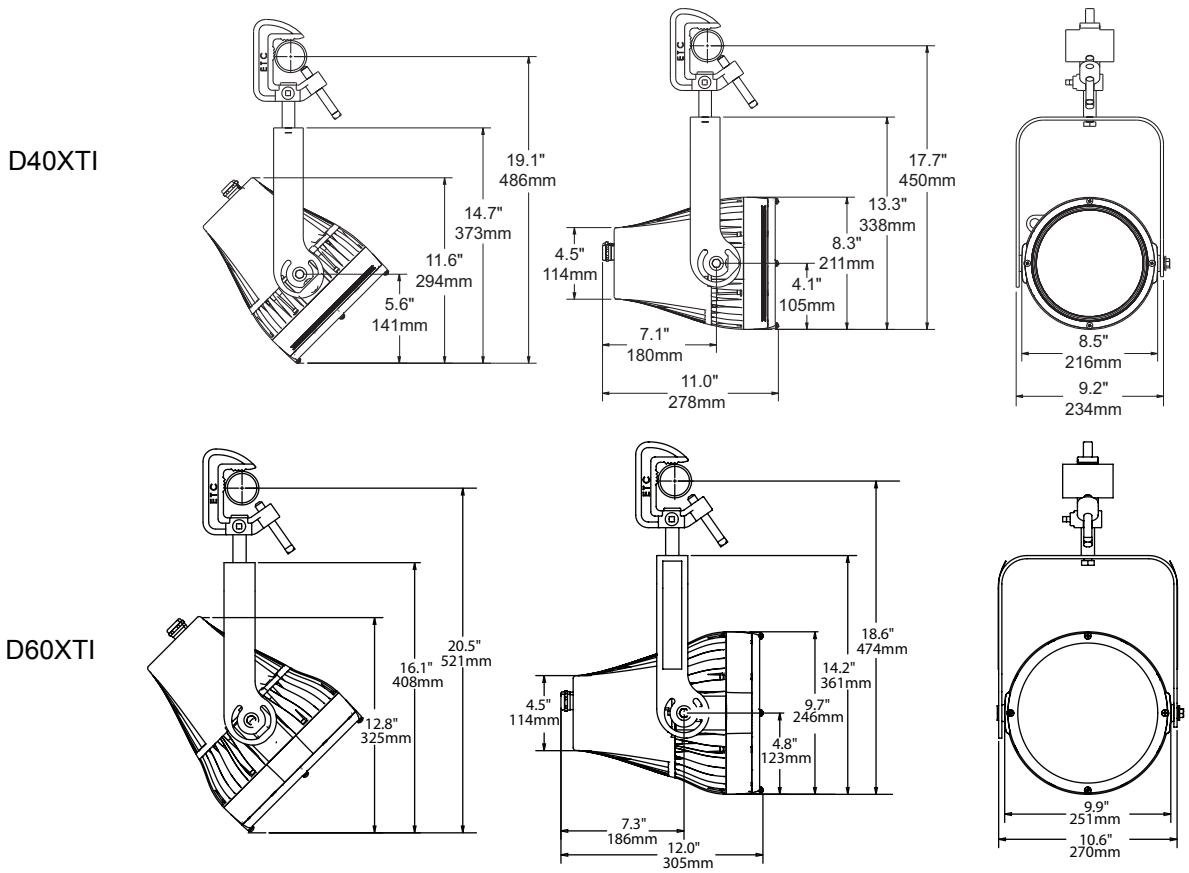


Figure-1.1 D40/D60 XTI Dimensions.

Fixture Weight

Total weight depends on how the individual fixture is configured.

Model	Weight[a]		Shipping Weight	
	Lbs.	Kg.	Lbs.	Kg.
D40XTI	15	6.8	18	8.2
D60XTI	23	10.43	24.7	11.2

a) Does not include mounting hardware.

Installation Clearances

Cooling and Duty Cycle

The D40/D60 XTI fixture is convection cooled and can operate all channels at full power continuously in ambient temperatures up to 40°C (104°F).

If ambient conditions exceed 40°C (104°F) or fail to allow sufficient airflow, over a long period of time, the fixture may shut down and remain off until they return to a safe operating temperature. The fixture provides two methods to indicate over temperature:

- Visible: The LED array glows in a dull, low intensity with only some emitters illuminated and the Error Indicator light turns on.
- Dark: The LED array turns off.

CAUTION:

Duty Cycle

Operating the fixture in higher ambient temperatures or low-airflow situations may cause the power supply to shut down. Following a cool-down period, the power supply will automatically reset and the fixture will return to operation.

It is good practice to power down any device with on-board electronics to limit unnecessary wear on the devices and eliminate residual use of electricity. When not in use, Desire fixtures should be powered down by disconnecting from power at the breaker.

LED life is adversely affected by high-temperature operation. When operating under elevated ambient temperatures, avoid turning all channels to 100% for extended periods, such as channel checks or focusing.

Typical Power Consumption D40XTI

Vivid

	100V	120V	240V
Idle Power / Current	10.5W / 0.135A	11W / 0.098A	12.7W / 0.078A
100% Boost Power / Current	102W / 1.12A	98W / 0.82A	95.6W / 0.403

Lustr+

	100V	120V	240V
Idle Power / Current	10.3W / 0.125A	10.5W / 0.094A	12.2W / 0.074A
100% Boost Power / Current	104W / 1.16A	102W / 0.861	99.7 W / 0.418

Fire

	100V	120V	240V
Idle Power / Current	10.5W / 0.125A	10.8W / 0.096A	12.5W / 0.076A
100% Boost Power / Current	91.2W / 1.02A	88.2W / 0.74A	87.2W / 0.369A

Ice

	100V	120V	240V
Idle Power / Current	11.0W / 0.123A	11.2W / 0.099A	12.8W / 0.077A
100% Boost Power / Current	104.2W / 1.17A	102.2W / 0.867A	99.5W / 0.42A

Studio HD

	100V	120V	240V
Idle Power / Current	11.1W / 0.134A	11W / 0.097 A	12.8W / 0.077A
100% Boost Power / Current	106.2W / 1.19A	103.5W / 0.883A	101.3W / 0.426A

Studio Daylight

	100V	120V	240V
Idle Power / Current	10.6W / 0.123A	10.6W / 0.095A	12.4W / 0.076A
100% Boost Power / Current	105.1W / 1.12A	103.3W / 0.878A	100.8W / 0.424A

Studio Tungsten

	100V	120V	240V
Idle Power / Current	10W / 0.111A	10.1W / 0.093A	11.9W / 0.075A
100% Boost Power / Current	104W / 1.05A	103.1W / 0.872A	100.3W / 0.422A

Typical Power Consumption D60XTI

Vivid

	100V	120V	240V
Idle Power / Current	4.2W / 0.08A	4.3W / 0.075A	4.1W / 0.067A
100% Boost Power / Current	117.9W / 1.19A	118W / 1A	115.6W / 0.526

Lustr+

	100V	120V	240V
Idle Power / Current	4.2W / 0.08A	4.2W / 0.075A	4.3W / 0.069A
100% Boost Power / Current	123.7W / 1.24A	123.6W / 1.04	121W / 0.546

Fire

	100V	120V	240V
Idle Power / Current	4.2W / 0.08A	4.3W / 0.075A	4.2W / 0.067A
100% Boost Power / Current	108.8W /1.1A	108.4W / 0.92A	106.2W/ 0.491A

Ice

	100V	120V	240V
Idle Power / Current	4.2W / 0.08A	4.2W /0.075A	4.3W / 0.068A
100% Boost Power / Current	129.W / 1.26A	124.4W / 1.05A	121.8W / 0.55A

Studio HD

	100V	120V	240V
Idle Power / Current	4.2W / 0.08A	4.3W / 0.76 A	4.3W / 0.068A
100% Boost Power / Current	125.1W / 1.26A	124.7W / 1.05A	122.5W / 0.552A

Studio Daylight

	100V	120V	240V
Idle Power / Current	4.2W / 0.08A	4.3W / 0.76 A	4.2W / 0.068A
100% Boost Power / Current	125.1W / 1.26A	124.7W / 1.05A	122.5W / 0.552A

Studio Tungsten

	100V	120V	240V
Idle Power / Current	4.3W / 0.08A	4.2W / 0.073A	4.2W / 0.065A
100% Boost Power / Current	124.4W / 1.25A	123.7W / 1.04A	121.2W / 0.545A

Note About LED Fixtures

All LED sources experience some lessening of light output and some color shift over time. Desire Series fixtures have complex thermal management systems to minimize these changes. With typical usage, a Desire fixture will still achieve at least 70% of its initial output after 50,000 hours of use (B50, L70). In individual situations, LEDs will be used for different durations and different levels. This can eventually lead to minor alterations in color performance, necessitating slight adjustment to presets, cues, or programs.

All LEDs may exhibit a slight shift in output as they rise to full operating temperature. Desire Series fixtures allow the selection of different power settings in order to balance the competing requirements of thermal stability and brightness. Depending on the selected setting, changes in output as fixtures warm up may or may not be visible to the eye.

Color Rendering Index and Color Quality Scale Ratings

Desire fixtures are evaluated for Color Rendering Index (CRI) and Color Quality Scale (CQS) performance using measured output spectrum and optimized mix solutions for a best spectral match to black body sources at 3200K and 5600K. Color fidelity was also measured. These numbers may fluctuate slightly from fixture to fixture. This is a normal characteristic of white LEDs, and this kind of variation is highly unlikely to be apparent in most applications. The performance is the same for all fixture versions.

Fixture	CRI	CQS	Color Fidelity	Duv
Vivid at 3200K	87	89	89	0.000
Vivid at 5600K	90	92	92	0.000
Lustr+ at 3200K	86	88	88	0.000
Lustr+ at 5600K	93	92	90	0.000
Studio HD at 3200K	89	90	91	0.000
Studio HD at 5600K	92	94	94	0.000
Studio Tungsten at 3000K	86	86	86	0.001
Studio Daylight at 5600K	71	70	69	0.001

Desire luminaires provide excellent color rendering, particularly the color-mixing versions. A Duv rating of 0.000 indicates that the color mix used was exactly on the black body line, with no green or magenta tint.

Studio Daylight and Studio Tungsten fixtures use only white-type LEDs at a fixed color temperature in order to maximize output and efficacy.

Installation

The D40/D60 XTI fixtures can be mounted four ways.

- On a pipe with a C-clamp
- On a permanent base
- On a pole
- On a wall

Install on pipe or a suitable, rigid, permanent base with secured bolts. This can include poured concrete pads, factory-supplied pole-top and wall-mount brackets, and other attachments which meet the published weight and wind-load requirements for the fixture.

Model	Weight[a]		Shipping Weight		Wind Rating
	Lbs.	Kg.	Lbs.	Kg.	
D40XTI	15	6.8	18	8.2	.72 EPA
D60XTI	23	10.43	24.7	11.2	.95 EPA

a) Does not include mounting hardware.

Detailed installation information is packaged with the fixture. Refer to *D40/D60 XTI Installation Instructions*.

Note: *The EPA number is obtained by estimating Cd(Wind Drag Coefficient) and multiplying it with the projected area of the object. Wind Drag Coefficients were obtained from AASHTO Sixth Edition 2013.*

WARNING: ***Do not use this fixture with a damaged power lead. If the power lead (cord set) is damaged, it must be replaced. Failure to follow this warning can result in serious injury or death.***

WARNING: ***All third-party mounting hardware should be corrosion-resistant and designed for use where installed.***

Installation on a Pipe

The D40/D60 XTI fixtures can be hung from a pipe using a C-clamp. The C-clamp attaches the fixture to the mounting pipe and allows you to adjust the position of the fixture once it is mounted.

Step 1: Tightly fasten the C-clamp to the yoke with the provided yoke bolt and lock washer.

Step 2: Place the C-clamp on mounting pipe, then tighten the pipe bolt to secure it.

Step 3: Loosen the C-clamp pan screw and rotate the yoke to the desired position.

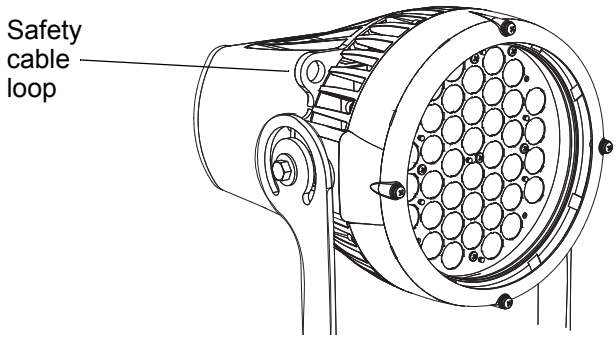
Step 4: Tighten the pan screw to lock the fixture.

CAUTION: *Tighten the C-clamp pipe bolt to 15-20 ft./lbs. (approximately finger tight plus up to one-quarter turn). Do not exceed 25 ft./lbs. Do not use excessive force.*

Tighten the yoke pivot bolt to 5-10 ft./lbs. (approximately finger tight plus up to one-eighth turn). Do not exceed 15 ft./lbs. Do not use excessive force.

Safety Cable

The safety cable (or other approved safety device) should be attached to the fixture housing and wrapped around the hanging structure (pipe). An appropriate attachment loop is provided on the protruding tab of the fixture housing. Take care to leave as little slack as possible in the safety cable to avoid the cable catching the yoke of the fixture.



Focus Adjustment

The fixture can be tilted up and down to focus the light where it is needed. Upon powering the fixture, all colors are automatically on so you can focus the fixture. This preset remains active until it is changed with an RDM configuration tool or DMX/RDM lighting control device.

Adjusting the Tilt

Step 1: Loosen the yoke locking bolt.

Step 2: With the fixture turned on, tilt it to the desired angle.

Step 3: Tighten the yoke locking bolt.

Adjusting the Pan

The pan is adjusted at the hanging clamp or the mounting base. Consult the clamp manufacturer's documentation for instructions on loosening and rotating the yoke at the clamp or refer to the appropriate installation instructions.

WARNING: ***The safety cable (or other approved safety device) must be securely attached to the safety cable loop before loosening the clamp.***

Accessory Installation

Accessories, such as grid louver, half shield, and lenses, are installed on the front of the fixture without compromising the integrity of the water-tight seal. Secondary lenses are secured with the trim ring and can be rotated while they are on the fixture, allowing you to focus the beam precisely.

For detailed information, refer to the following accessory installation instructions that are packaged with the accessory.

- *D40/D60 XTI Grid Louver Installation Instructions*
- *D40/D60 XTI Half Shield Installation Instructions*
- *D40/D60 XTI Secondary Lens Installation Instructions*

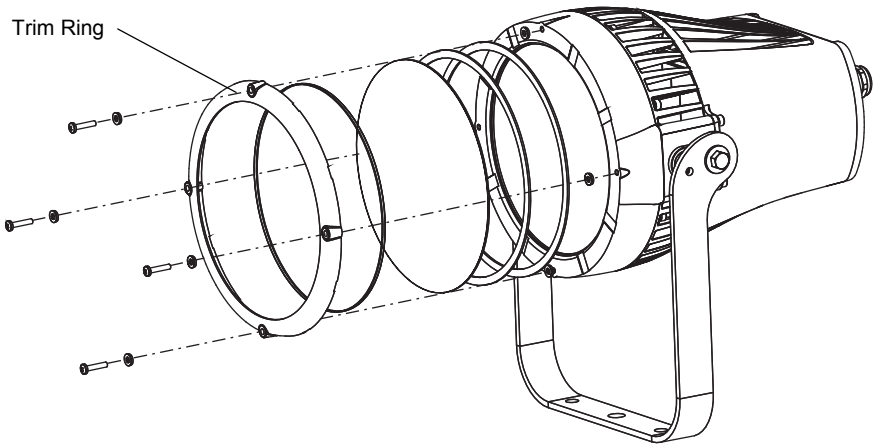


Figure-1.2 Trim Ring and secondary lens installation.

WARNING: ***Make sure all accessories are securely in position before installing the fixture.***

Installation on a Permanent Base

Install on a suitable, rigid, permanent base with secured bolts. This can include poured concrete pads on the ground or a solid structure such as on top of a concrete wall. For mounting, use the full-sized template that is included in the installation instructions or download the template at www.etcconnect.com.

Refer to the *D40/D60 XTI Installation Instructions.*

Installation on a Pole

A Single fixture or Twin fixture pole mount is used to attach the D40/D60 XTI fixture to a pole. The Single fixture pole mount fits nominal 2-3/8 inch poles and the twin pole mount fits nominal 4 inch poles. Both mounts can be rotated for focusing. The twin mount allows you to attach two fixtures side-by-side on one pole.

Refer to the *D40/D60 XTI Pole Mounts Installation Instructions.*

Installation on a Wall

The Wall Mount Bracket accessory for the D40/D60 XTI fixture provides a stable mounting position for the fixture, while providing a wire way for a clean and functional installation to walls and other vertical surfaces.

Refer to the *D40/D60 XTI Wall Mount Installation Instructions.*

Power and Data Cabling Requirements

Power

The D40/D60 XTI fixture operates on AC power, 100 to 240VAC/50-60Hz. The fixture must be connected to a non-dimmable power source in order to avoid damage to its internal power supply and other electrical components. Dimming will damage the fixture and void the warranty.

Europe	North America	Mains
Brown	Black	Live
Blue	White	Neutral
Yellow/green	Green	Ground

CAUTION: *The fixture must be grounded and wired in accordance with national, state and local electrical codes. Failure to do so may result in serious personal injury.*

The fixture is completely pre-wired at the factory and there is no need for entry into the housing.

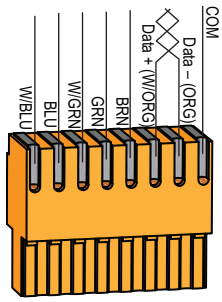
Refer to *D40/D60 XTI Installation Instructions* for detailed information about installation.

Data

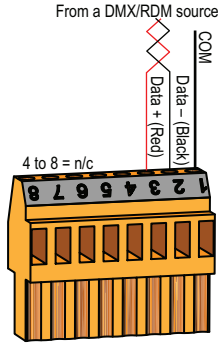
The D40/D60 XTI fixture operates on a DMX control signal or as a standalone fixture. The fixture is supplied with cable that includes DMX input and thru. DMX cables should be acceptable for DMX data transmission (not microphone cable) and should follow the standard pinout. The optional secondary data pair is not used by the D40/D60 XTI fixtures. The maximum DMX data run from any DMX source to the last fixture in a chain is 1000 feet (300m).

Use Belden® 9729, CAT-5e, or equivalent Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP) cable to connect the D40/D60 XTI into an IDC (Insulation Displacement Connector) style connector.

Cat 5e: DMX 512 Pinout		Belden 9729: DMX 512	
1	Common Shield	1	Common Shield
2	Data -	2	Data -
3	Data +	3	Data +
4	Unused Conductor	4	Not Connected
5	Unused Conductor	5	Not Connected
6	Unused Conductor	6	Not Connected
7	Unused Conductor	7	Not Connected
8	Unused Conductor	8	Not Connected



Cat5 (or equivalent) wire termination to IDC connector



Belden 9729 (or equivalent) wire termination to screw connector

See *DMX Profile, page 20* for information on DMX addressing of D40/D60 XTI fixtures.

Termination Board Installation

Each D40/D60 XTI fixture is connected to the network through a Termination board which is installed in a junction box that is suitable for outdoor use. The DMX cable from the fixture is connected to the Termination board.

Termination

The Desire D40/D60 XTI Series requires that the last fixture on a DMX/RDM line be terminated with a 120 ohm resistor, which is accomplished with the S1 switch on the Termination board. Set the switch to the ON position to terminate the last fixture. All others on the DMX/RDM line must be set to OFF.

Pass Thru Plug

Removing a fixture from the middle of a data run will eliminate DMX/RDM for the subsequent fixtures. To allow DMX to continue down the fixture line you will need to replace this fixture with a Pass Thru Plug. To purchase this Pass Thru Plug, contact an ETC dealer and request part number 7410K4006. For instructions on building your own Pass Thru Plug, go to www.etcconnect.com and search the wiki articles for “Desire DMX Pass Thru Plug”.

Indicator Lights

The indicator lights on the back of D40/D60 XTI fixture show the status of power input (blue), DMX input (green) and fixture errors (red). When the DMX/RDM signal is lost, the green indicator flashes. For more information, refer to *Status Indicators, page 33*.

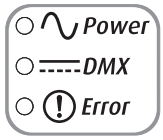


Figure-1.3 Indicator lights on the D40/D60 XTI fixture.

DMX Profile

Addressing

Addresses must be set between 1 and 510.

Each Desire fixture must be considered a separate DMX device for the purpose of DMX line-loading calculations.

DMX line-loading practice dictates that no more than 32 devices can be daisy-chained together. Consequently, no combination of Desire fixtures totaling more than 32 DMX devices should be configured in one DMX line. For runs of fixtures totaling more than 32 DMX devices, split the DMX runs by using a DMX splitter.

Note: *Depending on the selected fixture profile and activated features, a fixture with a starting address higher than 499 may not have control of all parameters, even though the highest address shown on the user interface is 512.*

Addressing is not required for standalone operation.

Profiles

Desire Series fixtures occupy 1 to 14 DMX channels depending on the profile and which features are turned on. The tables below describe the order and function of each channel.

Vivid, Lustr+, Fire, Ice, and Studio HD

Direct Control

Direct Control uses one DMX channel per individual color within the LED array for a total of seven color channels, arranged according to the *Color Mixes, page 21* table. Each controls the intensity of the color from 0 to 100%. An additional, 8th DMX channel is used as a master intensity fader for controlling the brightness of the overall fixture. Channel 9 is for strobe when enabled.

Data Channel		Control	Value	Function
1	Fixture address	Color 1[a]	0 to 255	Color intensity 0 to100%
2	Fixture address + 1	Color 2[a]		
3	Fixture address + 2	Color 3[a]		
4	Fixture address + 3	Color 4[a]		
5	Fixture address + 4	Color 5[a]		
6	Fixture address + 5	Color 6[a]		
7	Fixture address + 6	Color 7[a]		
8	Fixture address + 7	Intensity		Overall intensity 0 to 100%
9	Fixture address + 8	Strobe		Variable strobe control

a) See *Color Mixes, page 21*.

Color Mixes

The following table shows the color mixes for each fixture type.

Color	Fire	Ice	Lustr+	Vivid	Studio HD
1	Red	Red	Red	Red	Warm white
2	Red-orange	—	White	Red-orange	Cool white
3	Amber	—	Amber	Amber	Red
4	Green	Green	Green	Green	Amber
5	—	Cyan	Cyan	Cyan	Green-cyan
6	—	Blue	Blue	Blue	Blue
7	Indigo	Indigo	Indigo	Indigo	—

HSI (Hue Saturation Intensity) and HSIC (Hue, Saturation, Intensity, Color Temperature (White Point))

The HSI profile uses 4 channels of DMX input, corresponding to 16-bit hue (two channels: coarse and fine), saturation, and intensity. The HSI profile makes Desire fixtures compatible with conventional HSI console profiles while capitalizing on fixtures' expanded color capabilities. Channel 5 is for Strobe, when enabled. Also see *Color Matching, page 23*.

HSIC is similar to HSI, except that it uses an additional 6th channel to control the color temperature of the white point. White point is the color temperature of the white-light output when saturation is at zero. The Red Shift function is automatically disabled in the HSIC profile.

Data Channel		Control	Value	Function
1	Fixture address	Hue coarse	0 to 65535	Hue 0
2	Fixture address + 1	Hue fine		
3	Fixture address + 2	Saturation	0 to 255	Saturation 0 to 100%
4	Fixture address + 3	Intensity		Intensity 0 to 100%
5	Fixture address + 4	Strobe		Variable strobe control
6	Fixture address + 5	White point		Color temperature 2700 to 6500K

Note:

The HSI profile is optimized for maximum brightness at all settings.

At some settings, small changes in hue and saturation may produce unexpected jumps in brightness.

Shifts in brightness may be perceived during fades across hue, saturation, or both in cues and presets.

RGB

Effectively addresses all 7 colors via three channels of control. The RGB profile produces medium-quality color cross fades. It makes the Desire fixtures compatible with conventional RGB console profiles while maintaining enhanced color production from the fixture. Also see *Color Matching, page 23*.

Data Channel		Control	Value	Function
1	Fixture address	Red	0 to 255	Intensity 0 to 100%
2	Fixture address + 1	Green		
3	Fixture address + 2	Blue		
4	Fixture address + 3	—	—	—
5	Fixture address + 4	Strobe	0 to 255	Variable strobe control

Note: *The RGB profile is optimized for maximum brightness at all settings. Sometimes small changes in RGB values may produce unexpected jumps in brightness.*

Shifts in brightness may be perceived during color cross fades in cues and presets.

Studio

The fixture produces only white-type light, which is adjustable from 2700 to 6500K. The Studio profile uses 3 DMX channels to control Intensity, white point, and tint, (the green/magenta balance). Tint is adjustable without affecting the white point.

Studio is the default mode for Studio HD fixtures. The Studio profile is also available on all other Desire Series fixtures. For more information, see *Color Matching, page 23*.

Data Channel		Control	Value	Function
1	Fixture address	Intensity	0 to 255	Intensity 0 to 100%
2	Fixture address + 1	White point: 2700 to 6500K		0 = 3200K 1 to 254 = 2700K to 6500K 255 = 5600K
3	Fixture address + 2	Tint		0 = neutral white 1 to 127 = full plus-green to neutral white 128 = neutral white 129 to 255 = neutral white to full minus-green (full magenta)
4	Fixture address + 3	—	—	—
5	Fixture address + 4	Strobe	0 to 255	Variable strobe control

Strobe

In most profiles (Vivid, Lustr+, Fire, Ice, and Studio HD), strobe is assigned to channel 5. It adds another channel to any of the DMX profiles. Under the Advanced Settings menu, the strobe function may be disabled and the additional channel for strobe will not be used by the fixture. With strobe at either DMX value 0 or 255, the fixture output is constantly on. At DMX 1, the fixture strobes slowly and increases in speed toward DMX 254. When enabled, the Strobe channel controls the fixture output as follows.

DMX Value	Strobe Effect
0	Full on
1 to 254	Variable rate from slow to fast
255	Full on

Plus 7

Plus 7 adds precision color-control channels to the HSI, HSIC, RGB, and Studio profiles. For example, HSI with Plus 7 enabled becomes a 14-channel profile. Placing channel 7 at a value over 51% activates the 14-channel profile within the fixture. The desired color and intensity is achieved by using the HSI or RGB channels as a starting point. Channels 8 to 14 represent the native LED colors of the fixture and allow you to adjust each color up or down in order to fine-tune the overall color output.

Note: *Depending on the initial color mix, some LED colors may begin at full intensity. Moving the individual control channels for these colors from 128 to 255 will produce no effective change from the initial color mix. Conversely, some LED colors may begin at zero intensity, and moving individual control channels from 128 to 0 will produce no change.*

Data Channel		Control	Value	Function
7	Fixture address + 6	Plus 7 control	0 to 129 = Plus 7 disabled 130 to 255 = Plus 7 enabled	Disable or enable Plus 7 control
8	Fixture address + 7	Color 1[a]	128 = No change from initial color mix 129-255 = Increase from starting value to full intensity 127-0 = Decrease from starting value to zero intensity	Alter the individual LED colors within the array to a maximum of full intensity or a minimum of zero intensity.
9	Fixture address + 8	Color 2[a]		
10	Fixture address + 9	Color 3[a]		
11	Fixture address + 10	Color 4[a]		
12	Fixture address + 11	Color 5[a]		
13	Fixture address + 12	Color 6[a]		
14	Fixture address + 13	Color 7[a]		

a) See *Color Mixes, page 21*.

Color Matching

The color output of all Desire fixtures is calibrated at the factory. When operating in the RGB, HSI, HSIC, or Studio profile, each fixture makes accommodations for the specific LEDs in its array and produces output that is consistent with other fixtures, whether or not they utilize LEDs from the same production batch. Operating in the Direct Control profile or with Plus 7 settings adjustments bypasses this calibration and multiple fixtures may produce slightly different outputs when controlled as a group.

Studio Daylight, Studio Tungsten Profiles

Direct Control

The first DMX channel always controls Intensity from 0 to 100%.

Data Channel		Control	Value	Function
1	Fixture address	Intensity	0 to 255	Intensity 0 to 100%
2	Fixture address + 1	Strobe	0 to 255	Variable strobe control

DMX Footprints and Channel Mapping

Vivid, Lustr+, Fire, Ice, Studio HD

Channel	HSI	HSIC	RGB	Studio	Direct
1	Hue	Hue	Red	Intensity	Color 1
2	Hue fine	Hue fine	Green	Color temp	Color 2
3	Saturation	Saturation	Blue	Tint	Color 3
4	Intensity	Intensity	N/A	N/A	Color 4
5	Strobe*	Strobe*	Strobe*	Strobe*	Color 5
6	N/A	Color temp	N/A	N/A	Color 6
7	Plus7 on/off*	Plus7 on/off*	Plus7 on/off*	Plus7 on/off*	Color 7
8	Plus7 - (1)*	Plus7 - (1)*	Plus7 - (1)*	Plus7 - (1)*	Intensity
9	Plus7 - (2)*	Plus7 - (2)*	Plus7 - (2)*	Plus7 - (2)*	Strobe[a]
10	Plus7 - (3)*	Plus7 - (3)*	Plus7 - (3)*	Plus7 - (3)*	N/A
11	Plus7 - (4)*	Plus7 - (4)*	Plus7 - (4)*	Plus7 - (4)*	N/A
12	Plus7 - (5)*	Plus7 - (5)*	Plus7 - (5)*	Plus7 - (5)*	N/A
13	Plus7 - (6)*	Plus7 - (6)*	Plus7 - (6)*	Plus7 - (6)*	N/A
14	Plus7 - (7)*	Plus7 - (7)*	Plus7 - (7)*	Plus7 - (7)*	N/A

Studio Tungsten and Daylight

Channel	Control
1	Intensity
2	White point
3	Tint
4	–
5	Strobe

Chapter 2
Operation

This chapter contains the following sections:

- ***Overview*** 26
- ***Gadget*** 27
- ***DMX/RDM Gateway*** 28
- ***Presets and Sequences*** 34

Up to 32 Desire XTI fixtures can be daisy-chained on a DMX/RDM network. Each fixture can have an unique DMX address and each address can be configured separately. Also, more that one fixture can have the same address, allowing you to configure them identically.

You can use an RDM configuration tool or an RDM lighting control device to configure the fixtures. An RDM configuration tool is installed on a PC, which is connected to the DMX/RDM network via Gadget or a DMX/RDM gateway. After the fixtures are configured, Gadget or the gateway can be disconnected and a DMX or RDM control device can be connected to the network for continued operation.

See *Gadget, page 27* or *DMX/RDM Gateway, page 28*.

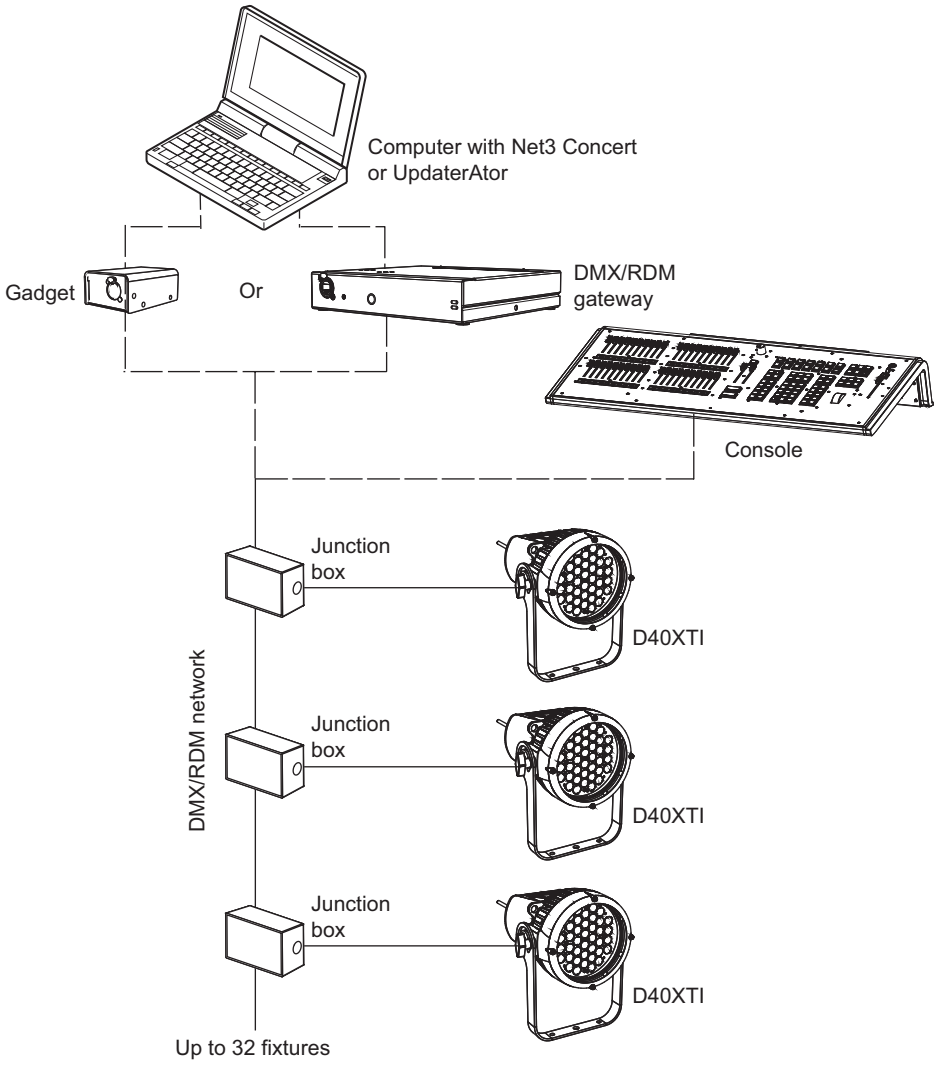


Figure-2.1 Architecture of a DXTI Series fixture network.

Gadget

Gadget provides a connection from a PC to your lighting system's DMX/RDM devices. Gadget provides DMX control level output, configuration, and monitoring for RDM devices including fixtures, dimmers, and more. You can also upgrade software for most DMX-based ETC products using UpdaterAtor or Net3 Concert software.

Prior to connecting Gadget, start the RDM configuration tool and apply power to the fixtures.

For detailed information, refer to *Gadget USB to DMX/RDM Interface Setup Guide.*

To Connect Gadget to a PC and the DMX/RDM network

Step 1: Connect the USB cable to the PC and the mini USB to Gadget.

Step 2: Connect the DMX cable to Gadget.

Step 3: Connect the other end of the DMX cable to the DMX/RDM network jack.

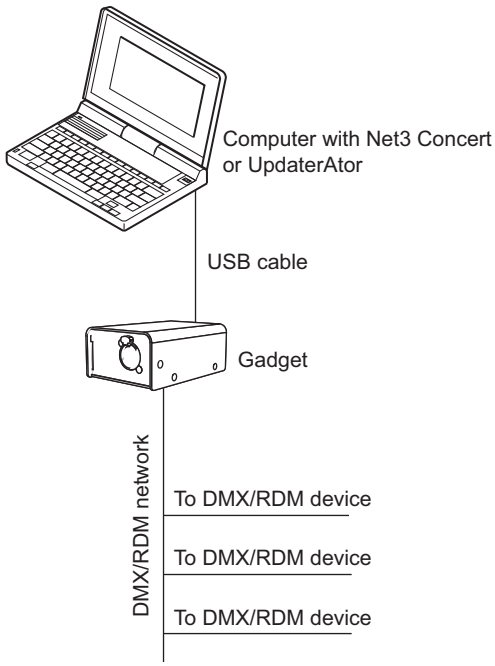


Figure-2.2 Gadget architecture.

Also see *DMX/RDM Gateway, page 28*.

DMX/RDM Gateway

A DMX/RDM gateway, such as an ETC Gateway, can be used to connect a PC to the DMX/RDM network so that you can configure the fixtures on the network. The Gateway can be connected directly to a PC with an Ethernet cable.

Prior to connecting through a gateway, start the RDM configuration tool software and apply power to the fixtures.

To Connect a gateway to a PC and the DMX/RDM network

Step 1: Do one of the following.

- Connect the PC to the local area network via Ethernet and then use an RJ45 cable to connect the gateway to the same network.
- Using an RJ45 cable, connect the PC to the gateway.

Step 2: Connect the DMX cable to the gateway.

Step 3: Connect the other end of the DMX cable to the DMX jack that is connected to the DMX/RDM network.

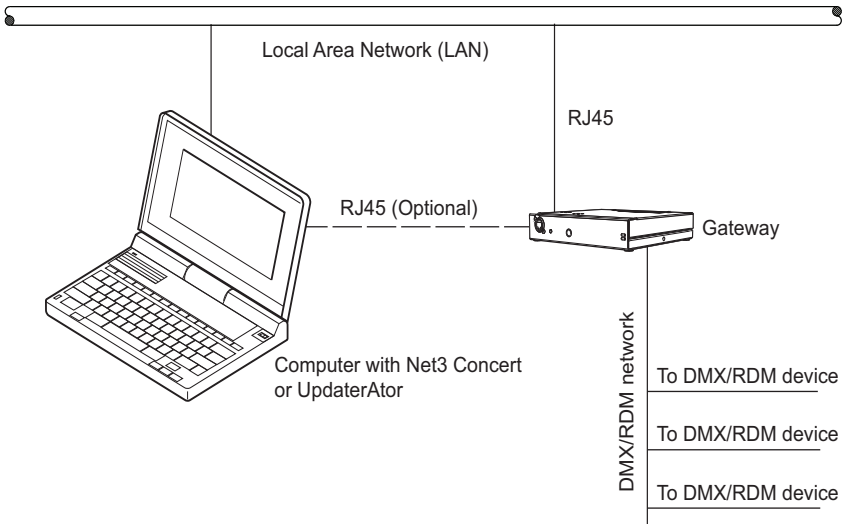


Figure-2.3 Gateway architecture.

Use an RDM configuration tool to configure the Desire XTI Series fixtures. After you configure the fixtures and disconnect Gadget or a DMX/RDM gateway, you may control the fixtures with a DMX or RDM lighting control device.

For detailed information about LED Config software, refer to the *LED Configuration Software Programming Guide*.

DMX Address

Assign a DMX address to one or more devices. The DMX address is 1 to 510.

Data Loss

Select the type of data loss. Data Loss is what happens to the fixture's output when the external control signal (either DMX or data from the Master fixture in a Master/Slave configuration) is lost. The choices are as follows:

Instant

As soon as the control signal is lost, the fixture shuts off output and the LED array goes black.

HLL-2Min

Hold last look for 2 minutes. The fixture retains its last setting for 2 minutes after the control signal is lost, after which it shuts off output.

Cycling power to the fixture before the 2 minutes have passed will clear the last look and the LEDs will remain off until control signal is restored.

HLL-4ever

Hold last look forever. After data is lost, the fixture maintains its last look until power is removed from the fixture or control signal is restored. The last look will not be restored after power has been cycled.

Plus Seven (Vivid, Lustr+, Fire, Ice, and Studio HD)

Plus Seven allows enhanced color-mixing precision when using the RGB, HSI, HSIC, or Studio profile as a starting point for color selection. Enabling Plus Seven adds another 8 DMX channels of control at the end of the control channels already in use by the fixture. For example, in the HSIC profile, with Strobe enabled, the fixture uses 6 channels of control. Enabling Plus Seven adds another 8 channels to the fixture, for a total of 14 channels of control.

The first additional channel is an activation channel for the Plus Seven function. A value of 0 to 50% (DMX 0 to 129) deactivates Plus Seven. A value of 51 to 100% (DMX 130 to 255) activates Plus Seven. The remaining 7 additional channels correspond to the individual colors within the fixture's LED array.

For more information, refer to *Plus 7, page 23*.

Using Plus Seven Control

The following procedure is performed on your RDM lighting control device.

Step 1: Select a starting color point for the fixture output using the standard control channels for RGB, HSI, etc.

Step 2: Set the first additional channel to a value between 51 and 100% to activate Plus Seven.

Step 3: Refine the fixture output by altering one or more of the 7 individual color channels.

- The starting point for each color is defined by the original color selection in step 1.
- The brightness of each color can be increased or decreased from the starting point to any value between zero and full output.
- Colors already at full output will not change when the Plus 7 channels are moved up from the starting point, and colors already at zero output will not change when the Plus 7 channels are moved down from the starting point.

Note:

Once any one of the seven individual color channels is altered from its neutral starting position, the settings for the original color point may no longer reflect the actual output of the fixture.

When using RGB, HSI, HSIC, or Studio profile for color selection, each fixture makes accommodations for the specific LEDs in its array and produces output that is consistent with other fixtures, whether or not they use LEDs from the same production batch.

Operating with Plus Seven enabled can override this calibration, and multiple fixtures may produce slightly different outputs when individual color channels are altered from their neutral starting points..

LED Settings

Output

Output is the way and amount to which the fixture constrains the overall power going to the LED array, which determines how consistent the fixture's brightness may be. Use Output to choose the optimal balance between two competing performance parameters, maximum brightness and output consistency, by adjusting:

- How much the fixture limits the overall power to the LED array.
- How the fixture reduces output as internal fixture components heat up during use or in high ambient temperatures.

The output options are as follows.

Regulated

Regulated is a moderately constrained power or brightness with consistent output under typical use. Power to the LEDs is separately regulated in order to maintain consistent brightness during the initial fixture warm-up period. This is recommended for most indoor applications.

Protected

Protected provides the most consistent output possible with the greatest potential for reduced overall brightness. This is best for outdoor use, changing environmental temperatures, and applications with high requirements for consistency in extreme operating conditions.

Boost

Boost provides the brightest possible output, with least guarantee of consistency. This is best for applications with low duty cycles, loose brightness requirements, or where ambient temperature is low.

Note: *In all Output settings, if the fixture gets too warm and internal components approach unsafe operating temperatures, the total power to the LED array is gradually reduced and proportionate brightness levels between the various colors of LEDs are maintained as much as possible in order to preserve the overall color mix; however, some minor shifts in output may occur. Power continues to ramp down as much as necessary until internal fixture components return to a safe temperature and an RDM message is sent.*

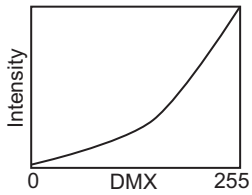
If the fixture exceeds its maximum internal temperature, the fixture enters a cool-down state, stops responding to the control signal, and it shuts down most or all power to the LED array and displays its over-temperature status according to its setting for over-temperature warning.

Curve

Curve is the correlation between the change in the value of the dimming control signal and the actual change in the fixture's brightness. Curve is also the extent to which the fixture lags in its response time to the control signal in order to facilitate smoothness in dimming.

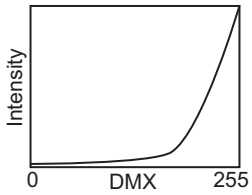
Standard

Standard is a modest curve for intuitive brightness changes at both high and low ends of the dimming range. Moderate lag in response for good smoothness. It allows quick jumps in brightness. Suitable for most applications.



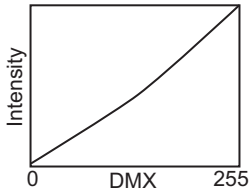
Incandescent

Exaggerated curve mimics the response of tungsten on a conventional dimmer. Lag is quite pronounced and present even in full on or off bumps. Extreme smoothness with no instant changes. Best when fixtures must operate in sync with incandescent sources.



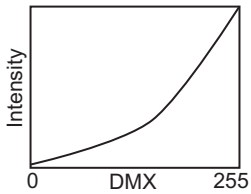
Linear

Linear has no curve. Brightness levels correlate exactly with the value of the dimming control signal. Moderate lag in response for good dimming smoothness. Linear allows quick jumps in brightness. It is best for studio lighting and applications with static scenes or looks.



Quick

Quick uses the standard dimming curve but with no lag or smoothing. All changes are instant and correlated exactly with the control input signal. Quick is best for extreme high impact and video-based control.



Output Frequency

Output Frequency is the frequency in Hz at which the LED array pulses, or blinks, as a function of Pulse-Width Modulation (PWM). The frequency is adjustable in order to avoid visible flicker on video and film. When altering the frequency in order to reduce noticeable flicker on camera, often only a small change is required. The range is 920 to 30,000 Hz in increments of 10. The default value is 1200 Hz.

For high speed exposure or rolling shutter cameras, use 25,000 Hz to increase the PWM which will result in flicker-free operation in most circumstances.

Changing the frequency from the default value can have a slight impact on the smoothness, color-mix consistency, or both when dimming.

Red Shift

Red shift allows the fixture to match its dimming performance to that of a conventional tungsten lamp as it dims. The fixture automatically changes its apparent White Point, or color temperature, as a function of overall intensity. Red shift works with both white-light and colored-light output settings. It is also known as amber drift and tungsten shift. Red shift is available only in the HSI and RGB profiles. It is not available on Studio Daylight and Studio Tungsten fixtures.

White Point (Vivid, Lustr+, Fire, Ice, and Studio HD)

White Point controls the appearance (color temperature) of white-light output when saturation is at or near zero. This option is available when using the HSI and RGB profiles. The choices are 2950K, 3200K, 5600K, and 6500K.

Status Indicators

Status Indicators, which are on the back of the fixture, are on by default. Select **Off** to turn the Status Indicators off.

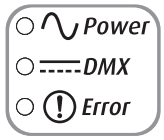


Figure-2.4 Status Indicators on the back of the fixture.

The status indicators are three, small, colored LEDs on the back of the fixture that indicate the status of:

- **Power** — Illuminated blue when AC power is supplied to the fixture.
- **DMX** — Illuminates green when an active DMX signal is being received by the fixture.
- **Error** — Illuminates red only when the fixture is experiencing a data error, high internal temperature, or other abnormal condition.

CAUTION: *Although it may be desirable in some applications to eliminate all stray light from the back of the fixture, turning the Status Indicators OFF prevents them from communicating potentially critical information. Use discretion when selecting the OFF setting.*

Over Temp

You can change how an over-temperature situation is indicated in order to control stray light.

Visible (Vivid, Lustr+, Fire, Ice, and Studio HD)

The fixture produces a low-level, red light from the LED array and turns on the error indicator light.

Visible (Studio Daylight, Studio Tungsten)

The fixture produces a low-level light from only some of the LEDs in the LED array and turns on the error indicator light.

Dark

The fixture turns off the LED array entirely.

Restore Defaults

Use **Restore Defaults** to return all the settings to the factory settings. This function clears all custom settings including all changes to Presets and Sequences.

Software Update Mode

When updating software to the fixture, the blue and green LEDs alternately blink to show that the fixture is in update mode. The blinking can change speed during this process depending on how hard the processor is being taxed by the update. Upon completion, the fixture reboots and the blinking ceases.

Presets and Sequences

Use Presets and Sequences to run a preset color mix or a sequence of presets in a stand-alone operation. when no external control signal is connected to the fixture.

Presets and sequences override Quick Setups and the Send DMX configuration. When a Preset or Sequence is stopped, the fixture or fixtures return to the previous configuration.

Presets

A Preset is a single, static look or color mix. Only one Preset can be active at a time. As you edit the preset settings, the change is updated live in the fixture's memory. However, the change is not saved to an RDM configuration tool or DMX/RDM lighting control device. If you customize a Preset for future use, you must record it. To record a preset, the fixture must be in HSI mode. A Preset takes precedence over DMX.

The fixture is shipped with all emitters active so you can focus the fixture during installation. This look remains active until it is changed with an RDM configuration tool or RDM lighting control device. Once you record a Preset, this original look is longer available.

Fade Time

Fade time is the length of time the fixture takes to cross fade from the previous setting to the Preset. The format is MM:SS. The default is 2 seconds.

Delay Time

Delay time is the length of time the fixture waits on the previous setting before initiating the cross fade to the Preset. The default is 0 seconds.

Hue (Vivid, Lustr+, Fire, Ice, and Studio HD)

Use **Hue** to change the overall hue of the Preset. If the Preset is currently active, the changes made in the Preset Settings pane update to the fixture output immediately.

Saturation

Use **Saturation** to change the saturation of the Preset color.

Intensity

Use **Intensity** to change the intensity of the Preset color.

Strobe

Use **Strobe** to change the flashing rate of the Preset. Refer to *Strobe, page 22*.

Presets (Vivid, Lustr+, Fire, Ice, and Studio HD)

A Preset is a single, static look or color mix. The Desire Series fixtures come with 24 default configurations. Only one Preset can be active at a time. You can activate any of the Preset color mixes and customize each one through your RDM device. The following table lists the default Preset color mixes.

Preset	Default Color
1	White
2	Warm
3	Cool
4	Minus Green
5	Lite Pink
6	Lite Gold
7	Yellow
8	Dark Straw
9	Dark Amber
10	Orange
11	Red
12	Med Pink
13	Dark Pink
14	Magenta
15	Purple
16	Dark Lavender
17	Deep Purple
18	Clear Blue
19	Lite Blue
20	Med Blue
21	Primary Blue
22	Blue-Green
23	Lite Green
24	Green

Presets (Studio Daylight, Studio Tungsten)

The Desire Studio Daylight and Studio Tungsten fixtures come with 24 available slots for Presets. There are no default Presets that come pre-configured from the factory. You can activate any of the Presets and customize each one. Only one Preset can be active at a time. Studio Daylight and Studio Tungsten fixtures have Presets that you can define both Intensity and Strobe values.

Sequences

A Sequence is a timed series of Presets. Up to 12 different Sequences may be altered for Preset selections, cross fade rate, and link time. Only one Preset within a sequence can be active at a time.

You can create your own custom sequence that includes two or more Presets. For example, you may want to sequence through Presets 2, 4, 23, and 1, in that order. As you enter these into the sequence, you also can set the rate and link time for each step.

As you edit the sequence settings, the change is updated live in the fixture's memory.

Step Number

You enter the number of the step in the sequence to be edited.

Preset Number

Preset is the number of a Preset, whether it is a predefined or a custom color mix.

Link Time (mm:ss)

Link Time is the length of time the fixture waits before moving from one Preset to the next. The format is minutes:seconds (mm:ss). The default is 2 seconds.

Rate (%)

Rate is the execution of the Presets' Fade Times and Delay Times within the Sequence, relative to their settings within the actual Presets. The available Rate range is 2 to 500%. The default is 100%.

A Rate of 100% represents running the Sequence with timing exactly as specified within the Presets. A Rate above 100% represents running the Sequence with faster timing than specified within the Presets. For example, with a Rate of 200%, a Preset with a Fade Time of 6 seconds would actually be run within the Sequence in only 3 seconds.

A Rate below 100% represents running the Sequence with slower timing than specified within the Presets. For example, with a Rate of 50%, a Preset with a Fade Time of 6 seconds would actually be run within the Sequence in 12 seconds.

End State

After each of the steps have been configured, set the End State. End state is what the fixture does once it completes the Sequence. Two end state options are available and both options repeat indefinitely until the Sequence is deactivated. To end the sequence, you must program an additional and final step within the sequence using Preset 0. Preset 0 marks the end of the Sequence. Preset 0 may only be used once within a Sequence. If you want the Sequence to repeat automatically, you may only define up to 23 steps with Presets 1 through 24, since the final step must be reserved for Preset 0.

Loop

Once the fixture completes the entire sequence, it immediately returns to the beginning and starts the sequence over again, in order.

Bounce

Once the fixture completes the entire sequence, it reverses the order of the presets and steps backward through them until reaching the starting step, at which point it starts the Sequence over again, in the original order.

Appendix A
Quick Start

This section will help you to quickly use the Desire XTI Series fixture. For complete, detailed information and step-by-step instructions, see *Operation, page 25*.

Install

Step 1: Hang or mount the fixture using the provided hardware and approved hardware accessories.

Step 2: Attach an approved safety cable.

Step 3: Install a secondary lens, if needed, with the smooth side out.

Step 4: Attach additional accessories (half shield, louver, etc.), if needed, onto the fixture.

Focus

Step 1: Using an RDM configuration tool or DMX/RDM control device, turn the fixture on to full intensity.

Step 2: Adjust the fixture's position as needed.

Step 3: When focusing is complete, return the fixture to normal operation.

Configure

Set DMX Address

Step 1: Using an RDM configuration tool or RDM lighting control device, set the address of the fixture.

Quick Setups

Various pre-programmed combinations of operational settings are available to quickly get you started. These settings are specifically created for different situations and are easily accessible with an RDM configuration tool or RDM lighting control device.

Quick Setups (Vivid, Lustr+, Fire, Ice, and Studio HD)

Quick Setup	Description	Profile	Features
General	General lighting: All-purpose settings for most lighting applications. The default setup except for fixtures with Studio LED arrays.	Direct control	• Standard dimming curve • Regulated output for brightness consistency • Individual color channels plus master intensity control • Allows for native color space crossfades • Output is NOT color-calibrated
Stage	Theatrical lighting: Tungsten-like performance and precise color-control. Uses the most DMX channels of all quick setups.	HSI Plus 7 enabled	• Incandescent dimming curve • Regulated output for brightness consistency • White point: 3200K
XT Arch	Outdoor and extreme environments: Longevity and reliability in applications with limited access. High degree of output consistency and protection against temperature swings.	HSI	• Standard dimming curve • Protected output for high-heat environments • Reduced overall brightness • White point: 3200K
High Impact	Concerts and High Impact lighting: Enables quickest response, simple RGB control and strobe channel for maximum effect usage.	RGB	• Quick dimming response • Boosted output for maximum intensity • Reduced consistency of output • White point: 5600K
Studio	Video or film lighting: Enables quick, comprehensive control of white light via DMX or RDM. High-quality white-light output. The Studio Quick Setup is operational in all fixtures for excellent white light performance. It is the default setting for Studio fixtures.	Studio	• Linear dimming curve • Regulated output for brightness consistency • Variable white point of 2950 to 6500K • Variable green/magenta balance (tint)

Quick Setups (Studio Daylight, Studio Tungsten)

Quick Setup	Description	Control Channels	Features
Studio	Video or film: The default setting for Studio Daylight and Studio Tungsten fixtures.	3 – Intensity, Strobe	• Linear dimming curve • Regulated output for brightness consistency • Strobe enabled
Stage	Theatrical lighting: Behaves like a theatrical fixture in control and dimming performance.	3 – Intensity, Strobe	• Incandescent dimming curve • Regulated output for brightness consistency • Strobe enabled
Single Channel	Architectural installations: Most streamlined settings for applications with limited control options.	1 – Intensity	• Standard dimming curve • Regulated output for brightness consistency

Appendix B
RDM Commands

The following table lists the RDM commands applicable to the Desire XTI fixtures.

Feature	Get	Set	Queued	RDM Parameter ID	Parameter Values	Enumerations
Status Messages	Yes	No	Yes	E120_STATUS_MESSAGES	—	—
Supported Parameters	Yes	No	Yes	E120_SUPPORTED_PARAMETERS	See RDM E1.20-2006	—
Parameter Description	Yes	No	Yes	E120_PARAMETER_DESCRIPTION	See RDM E1.20-2006	—
Device Info	Yes	No	Yes	E120_DEVICE_INFO	See RDM E1.20-2006	—
Device Model Description	Yes	No	Yes	E120_DEVICE_MODEL_DESCRIPTION	ASCII string for Model Description	—
Manufacturer Label	Yes	No	Yes	E120_MANUFACTURER_LABEL	ASCII string for manufacturer label	—
Device Label	Yes	Yes	Yes	E120_DEVICE_LABEL	ASCII string for device label	—
Factory Defaults	No	Yes	Yes	E120_FACTORY_DEFAULTS	None	—
Software Version Label	Yes	No	Yes	E120_SOFTWARE_VERSION_LABEL	ASCII string for software label	—
DMX Personality	Yes	Yes	Yes	E120_DMX_PERSONALITY	0 thru 7	“7CH, 8CH, HSI, HSIC, RGB, EHSI, EHSIC”
DMX Personality Description	Yes	No	Yes	E120_DMX_PERSONALITY_DESCRIPTION	0 thru 7	“7CH, 8CH, HSI, HSIC, RGB, EHSI, EHSIC”
DMX Start Address	Yes	Yes	Yes	E120_DMX_START_ADDRESS	1 thru 512	DMX Address
Slot Info	Yes	No	No	E120_SLOT_INFO	—	—
Slot Description	Yes	No	No	E120_SLOT_DESCRIPTION	—	—
Default Slot Value	Yes	No	No	E120_DEFAULT_SLOT_VALUE	—	—
Sensor Definition	Yes	No	Yes	E120_SENSOR_DEFINITION	0 thru 8	“LED1, LED2, LED3, LED4, LED5, LED6, LED7, LED Ambient, Control Ambient”
Sensor Value	Yes	No	Yes	E120_SENSOR_VALUE	0 thru 8	“LED1, LED2, LED3, LED4, LED5, LED6, LED7, LED Ambient, Control Ambient”
Identify Device	Yes	Yes	Yes	E120_IDENTIFY_DEVICE	“0, 1"	“Stop Identify, Start Identify”
Reset Device	No	Yes	Yes	E120_RESET_DEVICE	—	—

Feature	Get	Set	Queued	RDM Parameter ID	Parameter Values	Enumerations
LED Curve	Yes	Yes	Yes	ETC_LED_CURVE	“0, 1, 2, 3"	“Standard, Incandescent, Linear, Quick”
LED Curve Description	Yes	No	Yes	ETC_LED_CURVE_DESCRIPTION	“0, 1, 2, 3"	“Standard, Incandescent, Linear, Quick”
Strobe	Yes	Yes	Yes	ETC_LED_STROBE	“0, 1"	“Disabled, Enabled”
Output Mode	Yes	Yes	Yes	ETC_LED_OUTPUT_MODE	“0, 1, 2"	“Regulated, Boost, Protected”
Output Mode Description	Yes	No	Yes	ETC_LED_OUTPUT_MODE_DESCRIPTION	“0, 1, 2"	“Boost, Regulated, Protected”
Red Shift[a]	Yes	Yes	Yes	ETC_LED_RED_SHIFT	“0, 1"	“Disabled, Enabled”
White Point[a]	Yes	Yes	Yes	ETC_LED_WHITE_POINT	“0, 1, 2, 3"	“2950K, 3200K, 5600K, 6500K”
White Point Description[a]	Yes	No	Yes	ETC_LED_WHITE_POINT_DESCRIPTION	“0, 1, 2, 3"	“2950K, 3200K, 5600K, 6500K”
Output Frequency	Yes	Yes	Yes	ETC_LED_FREQUENCY	900 thru 1500	Hertz
Data Loss Behavior	Yes	Yes	Yes	ETC_DMX_LOSS_BEHAVIOR	“0, 1, 2"	“Instant Black, Wait 2 min, HLL”
Data Loss Behavior Description	Yes	No	Yes	ETC_DMX_LOSS_BEHAVIOR_DESCRIPTION	“0, 1, 2"	“Instant Black, Wait 2 min, HLL”
Plus Seven[a]	Yes	Yes	Yes	ETC_LED_PLUS_SEVEN	“0, 1"	“Disable, Enable”
Backlight Brightness	Yes	Yes	Yes	ETC_BACKLIGHT_BRIGHTNESS	0 thru 255	“0 = off, 255 = max brightness”
Backlight Timeout	Yes	Yes	Yes	ETC_BACKLIGHT_TIMEOUT	“0, 1, 2, 3, 4"	“0 = Never, 1 = 30sec, 2 = 1min, 3 = 5min, 4 = 15min”
Status Indicators	Yes	Yes	Yes	ETC_STATUS_INDICATORS	“0, 1"	“0 = Indicators Off, 1 = On”
Recalibrate Fixture	No	Yes	No	ETC_RECALIBRATE_FIXTURE	—	—
Over Temp Mode	Yes	Yes	Yes	E120_ETC_OVERTEMPMODE	“0, 1"	“0 = Dark, 1 = Visible”
Quick Setup Mode	Yes	Yes	Yes	E120_ETC_SIMPLESETUPMODE	“0, 1, 2, 3, 4, 5"	“0 = General, 1 = Stage, 2 = Arch, 3 = Effects, 4 = Studio, 5 = Advanced”
LED Strobe Description	Yes	No	No	E120_ETC_LED_STROBE_DESCRIPTION	“0, 1"	—
LED Red Shift Description[a]	Yes	No	No	E120_ETC_LED_RED_SHIFT_DESCRIPTION	“0, 1"	—
LED Plus Seven Description[a]	Yes	No	No	E120_ETC_LED_PLUS_SEVEN_DESCRIPTION	“0, 1"	—
Backlight Timeout Description	Yes	No	No	E120_ETC_BACKLIGHT_TIMEOUT_DESCRIPTION	“0, 1, 2, 3, 4"	—
Quick Setup Description	Yes	No	No	E120_ETC_SIMPLESETUPMODE_DESCRIPTION	“0, 1, 2, 3, 4, 5"	—
Over Temp Description	Yes	No	No	E120_ETC_OVERTEMPMODE_DESCRIPTION	“0, 1"	—

Feature	Get	Set	Queued	RDM Parameter ID	Parameter Values	Enumerations
Prepare For Software Download	No	Yes	No	E120_ETC_PREPAREFORSOFTWAREDOWNLOAD	—	—
Get requested CIE 1931 (x,y) coordinate	Yes	No	No	E120_ETC_LED_REQUESTED_XY	0 to 32767	0 = 0.0 32767 = 1.0
Get current CIE 1931 (x,y) coordinate	Yes	No	No	E120_ETC_LED_CURRENT_XY	0 to 32767	0 = 0.0 32767 = 1.0
Get current PWM duty cycle	Yes	No	No	E120_ETC_LED_CURRENT_PWM	0 to 32767	—
Get LED CIE Tristimulus values	Yes	No	No	E120_ETC_LED_TRISTIMULUS	See ETC Manf RDM doc	—
Get LED information	Yes	No	No	E120_ETC_LED_INFORMATION	See ETC Manf RDM doc	—

a) Fire, Ice, Studio, Lustr+ only

Corporate Headquarters ■ 3031 Pleasant View Road, P.O. Box 620979, Middleton, Wisconsin 53562-0979 USA ■ Tel +608 831 4116 ■ Fax +608 836 1736
London, UK ■ Unit 26-28, Victoria Industrial Estate, Victoria Road, London W3 6UU, UK ■ Tel +44 (0)20 8896 1000 ■ Fax +44 (0)20 8896 2000
Rome, IT ■ Via Pieve Torina, 48, 00156 Rome, Italy ■ Tel +39 (06) 32 111 683 ■ Fax +44 (0) 20 8752 8486
Holzkirchen, DE ■ Ohmstrasse 3, 83607 Holzkirchen, Germany ■ Tel +49 (80 24) 47 00-0 ■ Fax +49 (80 24) 47 00-3 00
Hong Kong ■ Rm 1801, 18/F, Tower 1 Phase 1, Enterprise Square, 9 Sheung Yuet Road, Kowloon Bay, Kowloon, Hong Kong ■ Tel +852 2799 1220 ■ Fax +852 2799 9325
Service: (Americas) service@etcconnect.com ■ (UK) service@etceurope.com ■ (DE) techserv-hoki@etcconnect.com ■ (Asia) service@etcasia.com
Web: www.etcconnect.com ■ Copyright © 2014 ETC. All Rights Reserved. ■ Product information and specifications subject to change.
7410M1250-1.6.0 ■ Rev A ■ Released 2014-02 ■ ETC intends this document to be provided in its entirety.